

## **Analysing the importance of demographic factor as determinant of research efficiency through Data Envelopment Analysis**

### **ABSTRACT**

Universities now seen as a crucial national assets in the growth of a country, including to be centres for creating knowledge and innovation, that later will drives the development of the economy as well as improving the quality of life for its citizens. Currently, public universities around the world have begun to realise the importance of ensuring their financial sustainability by exploring alternatives sources of income aside from the traditional government subsidy such as research grants from public grants, private institutions and international agencies. The question on how efficiently these grants are utilised by researchers would therefore become an important issue. This paper adopts the Data Envelopment Analysis (DEA) method to measure the relative inefficiencies of the academic faculty members of University Putra Malaysia (UPM), a public university in Malaysia using data collected from 2010 to 2016 and investigates the relationships between demographic factors, field of study and research inefficiency. The input and output variables used in this study are research grants received by academic faculty members and their corresponding publications in Citation Indexed Journals (CIJ), non-CIJ, as well as publishing books and chapters in books, with each output measured separately. Data is divided into two clusters: science and social science. Demographic factor examined are academic position of the researcher. Research inefficiency for the both science and social science fields generally worsen with higher academic positions. The effect for science field is more pronounced for CIJ, non-CIJ and books. Implications for future research and practice are discussed.

**Keyword:** Research efficiency; Data Envelopment Analysis (DEA); Public universities